

IN THE CLAIMS

For the convenience of the Examiner, all pending claims of the Application are reproduced below.

1. (Currently Amended) A method for providing a distributed service in a network, comprising:

executing a distributed service on a first virtual machine at a first router located on a first network;

receiving lease constraints associated with a request to use the distributed service, wherein the lease constraints include a percentage of the distributed service available and an amount of resources required to execute the percentage of the distributed service; and

determining to move the distributed service to a second virtual machine at a second router based on the lease constraints, **wherein the lease constraints comprise a required portion of the distributed service requested for use, and wherein the determining to move the distributed service comprises:**

**measuring an available portion of the distributed service on the first virtual machine; and**

**moving the distributed service to the second virtual machine on the second router if the required portion is greater than the available portion.**

2. (Original) The method of Claim 1, further comprising:

locating the second virtual machine at the second router;

allocating a processing resource on the second virtual machine to execute the distributed service; and

moving the distributed service from the first virtual machine to the second virtual machine.

3. (Previously Presented) The method of Claim 1, wherein the determining to move the distributed service comprises:

analyzing traffic flow on the first network; and

moving the distributed service to the second virtual machine on the second router to optimize the traffic flow on the first network.

4. (Canceled)

5. (Canceled)

6. (Original) The method of Claim 1, further comprising moving a portion of the distributed service to the second virtual machine at the second router based on the lease constraints.

7. (Original) The method of Claim 1, further comprising:  
locating a service broker on the first network; and  
requesting that the service broker locate the distributed service.

8. (Original) The method of Claim 1, further comprising:  
locating a service broker on the first network;  
requesting that the service broker locate the distributed service;  
identifying a plurality of locations for the distributed service on one or more networks; and  
determining availability of the distributed service at each identified location.

9. (Original) The method of Claim 1, further comprising:  
locating a service broker on the first network;  
asking the service broker to create a service path including a plurality of distributed services that perform a desired function;  
determining a plurality of locations of each of the distributed services on one or more networks;  
selecting the distributed services based on the lease constraints; and  
combining the selected distributed services to perform the desired function.

10. (Previously Presented) A method for providing a distributed service in a network, comprising:  
executing a distributed service on a first virtual machine at a first router located on a first network;  
receiving lease constraints associated with a request to use the distributed service, the lease constraints including a required portion of the distributed service requested for use, wherein the lease constraints include a percentage of the distributed service available and an amount of resources required to execute the percentage of the distributed service;  
measuring an available portion of the distributed service on the first virtual machine;  
and  
moving the distributed service to a second virtual machine on a second router if the required portion is greater than the available portion.

11. (Original) The method of Claim 10, further comprising:  
copying the distributed service to create a duplicate distributed service;  
moving the duplicate distributed service to the second virtual machine at the second router; and  
removing the distributed service from the first virtual machine when the lease constraints expire.

12. (Original) The method of Claim 10, further comprising:  
locating a service broker on the first network;  
requesting that the service broker create a service path including a plurality of distributed services that perform a desired function;  
determining a plurality of locations of each of the distributed services on one or more networks;  
selecting the distributed services based on the lease constraints; and  
combining the selected distributed services to perform the desired function.

13. (Original) The method of Claim 10, further comprising:  
locating a service broker on the first network;  
requesting that the service broker locate the distributed service; and  
generating the lease constraints associated with the request to use the distributed service.

14. (Currently Amended) A router, comprising:  
a processor; and  
a first virtual machine coupled to the processor, the virtual machine operable to:  
host a distributed service;  
receive lease constraints associated with a request to use the distributed service, wherein the lease constraints include a percentage of the distributed service available and an amount of resources required to execute the percentage of the distributed service; and  
determine if the distributed service should be moved to a second virtual machine on a remote router based on the lease constraints, **wherein the lease constraints include a portion of the distributed service requested for use; and**  
**the first virtual machine is operable to:**  
**measure an available portion of the distributed service; and**  
**move the distributed service to the second virtual machine on the remote router if the required portion is greater than the available portion.**

15. (Original) The router of Claim 14, wherein the first virtual machine is operable to:

locate the second virtual machine on the remote router;

allocate a processing resource on the remote router to execute the distributed service on the second virtual machine; and

move the distributed service from the first virtual machine to the second virtual machine.

16. (Canceled)

17. (Canceled)

18. (Original) The router of Claim 14, wherein the first virtual machine is operable to:

analyze traffic flow on a first network; and

move the distributed service to the second virtual machine on the remote router to optimize the traffic flow on the first network.

19. (Original) The router of Claim 14, wherein the first virtual machine is operable to:

copy the distributed service to create a duplicate distributed service;

move the duplicate distributed service to the second virtual machine on the remote router; and

remove the distributed service when the lease constraints expire.

20. (Currently Amended) Logic encoded in media for providing a distributed service at a router within a network, the logic operable to perform the following steps:

executing a distributed service on a first virtual machine at a first router located on a first network;

receiving lease constraints associated with a request to use the distributed service, wherein the lease constraints include a percentage of the distributed service available and an amount of resources required to execute the percentage of the distributed service; and

determining to move the distributed service to a second virtual machine at a second router based on the lease constraints, **wherein the lease constraints comprise a required portion of the distributed service requested for use, and wherein the determining to move the distributed service comprises:**

**measuring an available portion of the distributed service on the first virtual machine; and**

**moving the distributed service to the second virtual machine on the second router if the required portion is greater than the available portion.**

21. (Original) The logic of Claim 20, further comprising:

locating the second virtual machine at the second router;

allocating a processing resource on the second virtual machine to execute the distributed service; and

moving the distributed service from the first virtual machine to the second virtual machine.

22. (Canceled)

23. (Previously Presented) The logic of Claim 20, wherein the determining to move the distributed service comprises:

analyzing traffic flow on the first network; and

moving the distributed service to the second virtual machine on the second router to optimize the traffic flow on the first network.

24. (Original) The logic of Claim 20, further comprising:  
copying the distributed service to create a duplicate distributed service;  
moving the duplicate distributed service to the second virtual machine at the second  
router; and  
removing the distributed service from the first virtual machine if the lease constraints  
expire.

25. (Canceled)

26. (Original) The logic of Claim 20, further comprising:  
locating a service broker on the first network;  
requesting that the service broker locate the distributed service;  
identifying a plurality of locations of the distributed service on one or more networks;  
and  
determining availability of the distributed service at each identified location.

27. (Original) The logic of Claim 20, further comprising:  
locating a service broker on the first network;  
asking the service broker to create a service path including a plurality of distributed  
services that perform a desired function;  
determining a plurality of locations of each of the distributed services on one or more  
networks;  
selecting the distributed services based on the lease constraints; and  
combining the selected distributed services to perform the desired function.

28. (Previously Presented) An apparatus for providing a distributed service at a router within a network, comprising:

means for executing a distributed service on a first virtual machine at a first router located on a first network;

means for receiving lease constraints associated with a request to use the distributed service, wherein the lease constraints include a percentage of the distributed service available and an amount of resources required to execute the percentage of the distributed service; and

means for determining to move the distributed service to a second virtual machine at a second router based on the lease constraints, **wherein the lease constraints comprise a required portion of the distributed service requested for use, and wherein the determining to move the distributed service comprises:**

**means for measuring an available portion of the distributed service on the first virtual machine; and**

**means for moving the distributed service to the second virtual machine on the second router if the required portion is greater than the available portion.**

29. (Canceled)

30. (Canceled)